

CLAIMS

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1. An inductor element comprising two conductors, characterized in that they are formed in piles on a substrate in the state where they are mutually insulated, and are connected with each other at both odd ends, wherein one conductor apart from the substrate is used as an inductor conductor, and a lead wire of this inductor conductor is led out through a gap between another conductor, being near the substrate, and the substrate.
 2. The inductor element according to claim 1, characterized in that three or more layers of metal layers are formed on the substrate, and the two conductors and the lead wires are formed respectively with using the metal layers which are different layers being mutually apart by one or more layers.
 3. The inductor element according to claim 1, characterized in that the two conductors are connected at both odd ends with using a part of the lead wire.
 4. The inductor element according to claim 1, characterized in that the two conductors have substantially the same shape.
 5. The inductor element according to claim 1, characterized in that the two conductors have long shapes, and one end of one conductor in a longitudinal direction is connected with one end of the other in the longitudinal direction.
 6. The inductor element according to claim 1, characterized in that the two conductors have circular shapes less than one turn, and one end of one conductor is connected with one end of the other.
 7. The inductor element according to claim 1, characterized in that the two conductors have spiral shapes each number of

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turns of which is one or more, and one end of one conductor is connected with one end of the other.

8. The inductor element according to claim 1, characterized in that the two conductors each have a spiral shape having one or more turns, both odd ends are mutually connected, and also, the lead wire led from the inner circumferential end of the inductor conductor is made to pass between the other conductor and the substrate.

9. The inductor element according to claim 1, characterized in that the two conductors are formed in substantially linear shapes, and one end of one conductor is connected with one end of the other.

10. The inductor element according to claim 1, characterized in that the two conductors are formed in meander shapes, and one end of one conductor is connected with one end of the other.

11. The inductor element according to claim 7, characterized in that an inner end of the one conductor is connected with an outer end of the other conductor.

12. The inductor element according to claim 1, characterized by further comprising:

an inductance component of the inductor element; and
a capacitance component between the two conductors.

13. An inductor element comprising two conductors, characterized in that they are formed in piles on a substrate in the state where they are mutually insulated, and are connected with each other at both odd ends, wherein one conductor apart from the substrate is used as an inductor conductor, and further, an end of the other conductor not connected to the inductor conductor is terminated with a predetermined impedance element.

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14. The inductor element according to claim 13, characterized in that it is possible to change at least one device constant of a resistor, a capacitor, and an inductor in the impedance element, and termination conditions are changed by making the device constant variable.

15. The inductor element according to claim 14, characterized in that the substrate is a semiconductor substrate, and the capacitor is formed of a variable capacitance diode made of a semiconductor layer formed in the inside or outside of the semiconductor substrate.

16. The inductor element according to claim 14, characterized in that the substrate is a semiconductor substrate, and the resistor is formed of a channel of an FET made of a semiconductor layer formed in the inside or outside of the semiconductor substrate.

17. The inductor element according to claim 13, characterized in that the two conductors have substantially the same shape.

18. The inductor element according to claim 13, characterized in that the two conductors have long shapes, and one end of one conductor in a longitudinal direction is connected with one end of the other in the longitudinal direction.

19. The inductor element according to claim 13, characterized in that the two conductors have circular shapes less than one turn, and one end of one conductor is connected with one end of the other.

20. The inductor element according to claim 13, characterized in that the two conductors have spiral shapes each number of turns of which is one or more, and one end of one conductor is connected with one end of the other.

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21. The inductor element according to claim 13, characterized in that the two conductors are formed in substantially linear shapes, and one end of one conductor is connected with one end of the other.

22. The inductor element according to claim 13, characterized in that the two conductors are formed in meander shapes, and one end of one conductor is connected with one end of the other.

23. The inductor element according to claim 20, characterized in that an inner end of the one conductor is connected with an outer end of the other conductor.

24. The inductor element according to claim 13, characterized by further comprising:

an inductance component of the inductor element; and
a capacitance component between the two conductors.

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